L 39926-65
ACCESSION NR: AP4009826

3

MDF-2yields up to 40% of a beta-polymer; TMGF-11, only 5-8%. The beta-polymers, on air storage or drying in vacuum, harden to three-dimensional polymers, which still retain double bonds which do not react further with atmospheric oxygen. These beta-polymers may be used for lacquer coatings requiring only atmospheric oxygen as the initiator. Hard, but sufficiently elastic films form on glass, aluminum and ceramic surfaces from 5-20% solutions of the three beta-polymers in acetone. Hardness of the film could, however, be increased by heating. All the films have an impact strength above 50kgs cm/cm.; they are resistant to 50% acids. IR spectra for all the resins are presented, as well as some thermomechanical curves. "V. P. Maksimova and V. A. Budnikova took part in the work." " In conclusion the author expresses sincere thanks to A. A. Berlin for fruitful discussion of the results of the given work. Orig. art. has: 6 figures.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00

SUB CODE: GC, GC NO REF SOV: 007 OTHER: 002

Card 2/2 BJS

L 16037-66 EWT(m)/EWP(j)/T WW/GS/RM
ACC NR: AT6006241 SOURCE CODE: UR/0000/65/000/000/0030/0036

AUTHOR: Lipatova, T. E.; Skorynina, I. S.

ORG: Institute of Chemistry of High Molecular Compounds, AN UkrSSR, Kiev (Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR)

TITLE: Mechanism of grafting of certain polymers on a glass surface treated with titanium tetrachloride

SOURCE: AN UkrSSR. Modifikatsiya svoystv polimerov i polimernykh materialov (Modification of the properties of polymers and polymeric materials). Kiev, Naukova dumka, 1965, 30-36

TOPIC TAGS: glass, titanium compound, chloride, polymerization

ABSTRACT: By comparing the results of grafting polystyrene on fiber glass pretreated with titanium tetrachloride under various conditions, it was found that the grafting is accomplished by $TiCl_4$ molecules bound to the OH groups of the silicon skeleton. The grafting process is thought to occur via a carbonium ion mechanism, as follows: $TiCl_4$ bound to the OH group is probably a stronger acid than free $TiCl_4$. In this compound, the Si-O bond apparently becomes highly polarized. When

Card 1/2

the monomer reacts with the $-\overset{|}{\underset{|}{Si}}-OHTiCl_4$ complex, it forms a strong Si-C bond:

$$-\overset{|}{\underset{|}{Si}}-OHTiCl_4 + CH_2=\underset{C_6H_5}{\underset{|}{CH}}\rightarrow -\overset{|}{\underset{|}{Si}}-CH_2-\overset{+}{\underset{C_6H_5}{\underset{|}{CH}}} + \overline{TiCl_4OH}.$$

The usual growth of the molecular chain then takes place, as in cationic polymerization. The glass surface is thought to have an orienting effect on the graft polymerization. It is shown that on a glass surface pretreated with $TiCl_4$ (which heals the surface defects), one can achieve the grafting of not only polymers of vinyl monomers, but also polymers of binding resins such as polyester acrylate and ED-6 epoxy resin. Orig. art. has: 3 figures.

SUB CODE: 07/ SUBM DATE: 06Oct65/ ORIG REF: 009/ OTH REF: 000

L 20372-66 EWT(m)/EWP(j)/T RM/WW

ACC NR: AP6006536 (A) SOURCE CODE: UR/0191/65/000/011/0008/0010

49
47
B

AUTHORS: Lipatova, T. E.; Khoroshko, R. P.

ORG: none

TITLE: The polymerization mechanism of dimethacrylate-bis-(triethyleneglycol) phthalate in the presence of stannic chloride

SOURCE: Plasticheskiye massy, no. 11, 1965, 8-10

TOPIC TAGS: polymer, catalytic polymerization, polymerization rate, polymer structure, temperature dependence, reaction rate, solvent action

ABSTRACT: The object of this investigation was to determine the influence of temperature, nature of solvent and reaction time on the yield and properties of the polymer derived from the polymerization of dimethacrylate-bis-(triethylene-glycol)-phthalate in the presence of $SnCl_4$ catalyst. The experimental procedure followed here has been described earlier by T. E. Lipatova and A. A. Berlin (DAN SSSR, 148, 353 (1963)); T. E. Lipatova (Plast. massy, No. 1, 3 (1964)). The experimental results are presented in tables and graphs (see Fig. 1). It is concluded that the complex-forming processes between the catalyst and the

UDC: 678.674'4'0:66.095.26

Card 1/2

L 20372-66

ACC NR: AP6006536

2

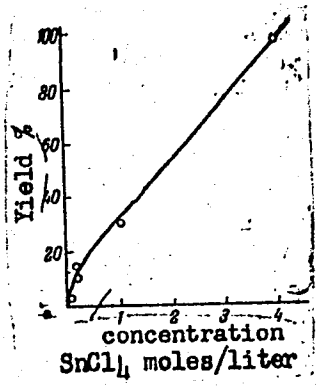

Fig. 1. Dependence of polymer yield on the catalyst concentration at -78C.

functional groups of the oligoester play a determining role in the polymerization process. It was found that the reaction yields a branched, soluble polymer capable of assuming a three-dimensional structure. L. I. Dorofeyeva took part in the experimental work. Orig. art. has: 3 tables and 3 graphs.

SUB CODE:07,11/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 002

Card 2/2 vmb

L 45407-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL RM/WW

ACCESSION NR: AP5011244 UR/0190/65/007/004/0580/0585

AUTHORS: Lipatova, T. E.; Siderko, V. M.; Budnikova, V. A.

TITLE: The reactivity of oligoesters in carbonium polymerization

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 4, 1965, 580-585

TOPIC TAGS: polymerization, ester, IR spectroscopy, ethyl chloride

ABSTRACT: The copolymerization of the unsaturated oligoester dimethylacrylate-bis-(triethyleneglycol) phthalate with styrene was studied, with the polymerization being carried out in ethyl chloride at 0°C. The total concentration of reacting substances was about 1.25 mole/liter with different concentrations of the catalyst $TiCl_4$: about 0.003 and about 0.015 mole/liter. The experimental method followed that previously described (Vysokomolek. soyed., 6, 910, 1964). Composition of the polymers was determined by IR spectroscopy. The relative monomer reactivity ratios were calculated for the different catalyst concentrations. For a catalyst concentration of 0.003 mole/liter, the ratio for styrene was found to be 0.15, for oligoester acrylate 0.75. At a concentration of 0.15 mole/liter, the values were 0.36 and 0.54 respectively. At oligoester contents above 45% (45-70%) the copolymer showed anomalously high content of this

Card 1/2

L 45407-65
ACCESSION NR: AP5011244

2

compound. The relative monomer reactivity ratios for this region were computed and found to be 0.05 and 2.45 respectively. These results show that the reactivity of oligoester acrylate changes according to the molar ratio of oligoester to the catalyst. It is concluded that, during polymerization of the oligoester molecules containing atoms that are free to form complexes with the catalysts, the formation of complexes determines the composition of the copolymer. Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii, AN BSSR (Institute of General and Inorganic Chemistry, AN BSSR)

SUBMITTED: 25Apr64 ENCL: 00 SUB CODE: OC

NO REF SOV: 006 OTHER: 003

Card 2/2

LIPATOVA, T.E.; SIDERKO, V.M.

"Living" polymers of dimethacrylate-bis-(triethylene glycol) phthalate. Vysokom. soed. 7 no.8:1476-1477 Ag '65. (MIRA 18:9)

L 32388-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM

ACCESSION NR: AP5007185 S/0286/65/000/003/0061/0061

AUTHOR: Lipatova, T. E.; Cherebatova, T. I.

TITLE: A method for hardening unsaturated polyesters. Class 39, No. 168004

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 3, 1965, 61

TOPIC TAGS: Polyester, hardening method, titanium tetrachloride, polymerization

ABSTRACT: This Author's Certificate introduces a method for hardening unsaturated polyesters by polymerizing them with $TiCl_4$. Polyester maleates are used to produce gasoline resistant rubberlike products.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN BSSR (Institute of General and Inorganic Chemistry AN BSSR)

SUBMITTED: 19Apr63 ENCL: 00 SUB CODE: GC, MT

NO REF SOV: 000 OTHER: 000

Card 1/1

Lipatova, T. E.

ZHURNAL FIZICHESKOY KHIMII

Vol 30, Issue Nr 8, August, 1956

5
2 may

THE CARBONIUM COPOLYMERIZATION OF UNSATURATED COMPOUNDS

I. INVESTIGATION OF THE COPOLYMERIZATION OF ISOPRENE AND STYRENE

T. E. Lipatova, A. R. Gantmakher and S. S. Medvedev

The copolymerization of isoprene and styrene in ethyl chloride solution at 0° C has been investigated. It was found that the initiation rate of the copolymerization is not the sum of the individual polymerization rates. The rate of initiation of the polymerization of styrene decreases on adding isoprene. This can be explained by the presence in the solution of monomer – catalyst complexes varying in activity toward the initiation reaction. From data on the composition and degree of unsaturation of the polymers it is concluded that on copolymerization of isoprene and styrene the internal double bonds of the copolymer participate in the chain growth process. It is suggested that the values for the copolymerization constants 0.8 (styrene) and 0.1 (isoprene) do not give the value of the true relative reactivity of the monomers, owing to steric effects.

THE CARBONIUM COPOLYMERIZATION OF UNSATURATED

arising in the reaction of the tertiary carbonium ion with the chain end and the monomer

Enrichment of the copolymer in isoprene as compared to its content in the initial reaction mixtures at low concentrations of the latter in styrene indicates a higher reactivity in the post-termination stage.

It was found that as the copolymerization proceeds its initiation rate sharply increases.

45401
S/190/63/005/002/023/024
B101/B102

15.8210

AUTHORS: Lipatov, Yu. S., Lipatova, T. E., Vasilenko, Ya. P., Sergeyeva, L. M.

TITLE: Study of the interaction between polymers and fillers. VII. Glass transition point and packing density of filled polystyrene and polymethyl-methacrylate

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 2, 1963, 290-295

TEXT: Polystyrene (PS) and polymethyl methacrylate (PMMA) were filled with glass fibers 20-50 mm long, or cut to a length of 0.1-0.2 mm, or with powdered glass. Films were made of these and the glass transition point T_g was determined dilatometrically. PMMA had two T_g; in nonfilled PMMA $T_{g_1} = 85.5^{\circ}C$, $T_{g_2} = 113^{\circ}C$. Results: T_g rose with increasing degree of filling. Moreover, the form of the filler was important. T_g increased, e.g., from $84^{\circ}C$ for nonfilled PS to $94^{\circ}C$ for 50% filling with short glass

Card 1/3

Study of the interaction between ...

fiber, to 88°C with long glass fiber, to 108°C for powdered glass. In PMMA with 50% short glass fiber filling T_{g_1} = 110°C, T_{g_2} = 131.8°C. With higher degrees of filling, T_{g_2} was no longer observed. T_{g_1} increased linearly with the degree of filling, T_{g_2} somewhat more slowly. The rise of T_g is explained by the mobility of the molecular bundles on the surface being limited by the formation of strong physical bonds. In PMMA the increase of T_g is steeper because of its better adhesion to the glass. With increasing degree of filling, the swelling of the films increased equally, i.e., in PS from 80% for nonfilled to 290% for 50%-filled, in PMMA from 220 to 310%. Hence it is concluded that the packing density decreases owing to the filling. In PS, T_g fell almost linearly with increasing content in plasticizer (dimethyl phthalate). This is due to the plasticizer inducing a hindrance to the formation of stronger bonds between the polymer molecules and the surface. With equal content of plasticizer, T_g falls more sharply with a higher degree of filling. Thus the properties of filled films of

S/190/63/005/002/023/024
B101/B102

Study of the interaction between ...

rigid polymers differ from those of nonfilled films in having higher T_g and looser molecular packing. There are 5 figures and 2 tables.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN BSSR
(Institute of General and Inorganic Chemistry AS BSSR)

SUBMITTED: September 30, 1961

Card 3/3

L 15327-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL/ASD(m)-3/AS(mp)-2
WW/RM

ACCESSION NR: AP4049150 S/0190/64/006/011/1969/1973

AUTHOR: Tutayeva, N. L.; Lipatova, T. E.; Lipatov, Yu. S.

TITLE: Effect of grafting linear and three-dimensional polymers on some properties of oriented polymers

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 11, 1964, 1969-1973

TOPIC TAGS: oriented polymer, polymer viscose fiber, linear polymer grafting, three dimensional polymer grafting, polystyrene grafting, polyacrylate ester grafting, graft polymerization, grafted polymer property

ABSTRACT: The fact that polymer fibers have valuable properties prompted a study of the modification of these properties by the grafting of linear or three-dimensional polymers; it was expected that the grafted polymers could be used to create materials with new properties. Grafting of three-dimensional polyacrylate ester and of polystyrene onto viscose fiber (cord) was achieved by polymerization of the oligomer in dilute solution at the boiling point of the solvent (acetone),

Card 1/2

L 15327-65
ACCESSION NR: AP4049150

2

and by polymerization of styrene at 50C in the presence of preliminary irradiated fiber. Measurements of the ultimate swelling in alkali and of the tensile strength of the grafted fibers showed that for low grafting values a sharp change in the properties takes place. Grafting of the three-dimensional polymer in the microcavities does not lead to further disturbance of the fiber structure, while grafting of polystyrene above a certain value disrupts the oriented structure of the viscose fiber. The increase in tensile strength of the fibers with grafted polyacrylate ester is explained in terms of the cross-linking of elementary fibers by means of three-dimensional grafted polymers. Certain general principles of grafting on oriented polymers were deduced on the basis of data from this and previous studies. Orig. art. has: 5 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN BSSR (Institute of General and Inorganic Chemistry, AN BSSR)

SUBMITTED: 06Jan64 ENCL: 00 SUB CODE: MT

NO REF SOV: 002 OTHER: 002 ATD PRESS: 3138

Card 2/2

L 41648-65 EPF(c)/EWG(j)/EWA(h)/EWP(j)/EWT(m)/T/EWA(1) Pc-4/Pr-4/Pab RM
ACCESSION NR: AP5006554 S/0191/65/000/003/0006/0008

AUTHOR: Lipatova, T. E.

TITLE: Catalytic polymerization of unsaturated polyesters. Carboxylic polymerization of maleate polyester

SOURCE: Plasticheskiye massy, no. 3, 1965, 6-8

TOPIC TAGS: polymerization synthesis, maleic anhydride, titanium tetrachloride, catalysis, copolymerization

ABSTRACT: Polymerization of a maleate polyester under the action of a $TiCl_4$ catalyst was studied in the mass and in solution. The unsaturated polyester was obtained by polycondensation of maleic anhydride and diethylene glycol. The polyester was polymerized in vacuum with a catalyst concentration of 0.125 *mol/l*. This work demonstrates the possibility of polymerization of a maleate polyester having a symmetrically substituted double bond with electronegative substituents. The study of the infrared spectra of the polymers shows that three-dimensional polymers are unsaturated, and that this unsaturated state persists even in very coarse lattices after forming at high temperatures and prolonged ultraviolet exposure. It was found that two types of polymers are formed during copolymerization of a maleate

Card 1/2

L 41648-65

ACCESSION NR: AP5006554

with styrene: one soluble in benzene and one insoluble in benzene and in a benzene-alcohol mixture. The overall yield of polymers is 30%. T. I. Cherbatov participated in the work. Orig. art. has: 1 table, 3 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: GC, OC

NO REF SOV: 005 OTHER: 000

CC

Card 2/2

LIPATOVA, Tat'yana

Chemistry

22 Mar 64

BSSR

LIPATOVA, Tat'yana, Cand of Chemical Sciences; Sr Scientific Sotrudnik, Institute of General and Inorganic Chemistry, Acad of Sciences BSSR, is the author of an article in source on the role of women in Soviet society.

Sovetskaya Belorussiya, 22 Mar 64 (1)

L 2984-66 EWT(m)/EPF(c)/EWP(j)/T RPL WW/RM

ACCESSION NR: AP5022612 UR/0190/65/007/009/1626/1632
66.095.26+678.62

AUTHORS: Tsybul'ko, A. Ya.; Lipatova, T. E.; Lipatov, Yu. S.

TITLE: Copolymerization of an unsaturated novolac ester with styrene

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 9, 1965, 1626-1632

TOPIC TAGS: polymer, polystyrene, graft copolymer, copolymerization, thermomechanical property, ester, styrene, novolac, infrared spectroscopy

ABSTRACT: The detailed study of copolymerization of novolac ester with styrene, the physical and chemical properties of the copolymer, and the reaction mechanism and reactivity of reagents are described. The reaction is both theoretically and practically interesting since copolymerization with participation of oligomers is unusual and also leads to products capable of solidification. Preparation of modified novolac (novolac methacrylate) was described by the authors earlier (Vysokomolek. soyed., 6, 1055, 1964). Copolymerization was conducted in a dimethylformamide solution, in N_2 atmosphere and in sealed glass ampules, by heating the reagents for 30 hours at 70C and using azodiisobutyronitrile as an

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L 2984-66

ACCESSION NR: AP5022612

3

initiator. The ratio of reactants was varied, and its effect upon the composition of the product was measured by turbidimetric titration and infrared spectroscopy. It was found that graft copolymers of polystyrene with the oligomeric molecules were formed, and the frequency of branching was a function of the reaction mixture composition. The reactivities of the double bonds of styrene and modified novolac during copolymerization were calculated using equations of A. D. Abkin and S. S. Medvedev (Zh. fiz. khimii, 21, 1269, 1947). It is assumed that the low reactivity of methacrylic groups is due to steric factors which also affect the polymerization process. Study of thermomechanical properties of the graft polymers has shown that they can solidify upon heating. Small amounts of polystyrene grafted onto the modified novolac have a large effect upon increasing the flow temperature. Orig. art. has: 3 tables and 5 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii, AN BSSR (Institute for General and Inorganic Chemistry, AN BSSR)

44,55

SUBMITTED: 26Oct64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 006 OTHER: 002

Card 2/2

LIPATOVA, Valentina Alekseyevna; KOSHELEV, Aleksey Georgiyevich

[Collective-farm tractor brigade on a cost-accounting basis] Kolkhoznaia traktornaia brigada na khozraschete. Moskva, Sovetskaia Rossiia, 1958. 22 p. (MIRA 13:7)
(Tractors)

Lipatova, V. A.

FD 1049

USSR/ Physics - Hysteresis

Card 1/1 : Pub. 153 - 20/23

Authors : Lyustrova, A. P., and Lipatova, V. A.

Title : Investigation of the hysteresis of the ballistic demagnetizing factor

Periodical : Zhur. tekh. fiz., 24, 1513-1519, Aug 1954

Abstract : Clarify the character of the hysteresis N(J) in occurring R. I. Yanus's formula (1950) for work expended against hysteresis during remagnetization of a ferromagnetic; i. e., clarify the elimination of the hysteresis loop of the ballistic demagnetizing factor. Also describe the influence on the character and magnitude of the hysteresis, of (a) the closeness of the loop to the limit for a given ferromagnetic, (b) properties of material, and (c) ratio of length to diameter. Thank Prof. R. I. Yanus for posing the subject.

Institution : --

Submitted : 18 January 1954

137-58-2-3810

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 217 (USSR)

AUTHORS: Lipatova, V.A., Gel'd, P.V., Davydov, K.N.

TITLE: Thermoelectric Properties of Alloys of Silicon with Iron, Chromium, and Manganese (Termoelektricheskiye svoystva splavov kremniya s zhelezom, khromom i margantsem)

PERIODICAL: V sb.: Fiz.-khim. osnovy proiz-va stali. Moscow, AN SSSR, 1957, pp 387-398. Diskus., pp 408-409

ABSTRACT: The thermo-emf, E, of Fe-Si-, Cr-Si-, and Mn-Si alloys is investigated in accordance with the constitutions thereof. Measurements were made on a Korzh instrument (Zavodsk. lab. 1948, Vol 14, p 107). E is negative and small (not over 1.58mv at 100°C) for Fe alloys containing 4-6% Si. As the Si contents increase the E diminishes, reaching 0 at 17% Si. At 17-59% Si, E is positive, negligible in value, and little dependent upon the constitution of the alloy. A change in the Si content from 57 to 59% causes E to change from 0.67 mv at 100° to 0. As the Si contents are further increased, E becomes negative, and its value increases. In the case of cast (99.2%) Si, E is 51-60 mv at 100°. In Si-Cr alloys the

Card 1/2

Thermoelectric Properties of Alloys (cont.)

E of pure Cr is +0.6 mv at 100°. As the Si content is increased, the E diminishes, changes sign, and is minus (0.9-1.0) mv at 100° for 10% Si. Subsequently E diminishes rapidly and acquires negative values. The E curve for Mn-Si alloys reveals points of inflection corresponding to stoichiometric constitutions and regions in which the chemical compounds are stable. The correlation between the E curves and the fusibility curves of the systems was found. It is assumed that alloys with negative E have a larger number (per unit volume) of small crystals with small n-type conductivity. The E of various modifications of lebowite in the sigma phase of Fe-Si were investigated. The low-temperature modification thereof has a positive E of 0.3-0.6 mv at 100°, which is little dependent upon the Si content. The equilibrium $\mathcal{E}_\beta$ is readily hardened at 650-908° and is characterized by high E values, strongly dependent in magnitude and sign upon the Si contents, at room temperature. The E of $\mathcal{E}_\alpha$(920°) depends upon the concentration of the alloy in magnitude and sign.

A. M.

1. Silicon alloys--Thermoelectric properties 2. Manganese-silicon alloys --Thermoelectric properties 3. Chromium-silicon alloys--Thermoelectric properties 4. Iron-silicon alloys--Thermoelectric properties

Card 2/2

SOV/137-58-7-15625

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 244 (USSR)

AUTHOR: Lipatova, V. A.

TITLE: Hall Effect in Ferromagnetics (Effekt Kholla v ferromagnetikakh)

PERIODICAL: Tr. Ural'skogo politekhn. in-ta, 1957, Nr 72, pp 21-34

ABSTRACT: The value for Hall's e. m. f. was investigated in thermomagnetic Ni-Cu alloys containing 22.04, 27.5, and 30.04% Cu at temperatures above and below the Curie point T_c in relation to the magnetization J. Measurement of the magnitude of Hall's e. m. f. at temperatures below T_c was made on 7.5 x 12 x 140-mm specimens, for temperatures above T_c on 30 x 40 x 0.25-mm plate specimens of the same alloys. It is found that Hall's e. m. f. above and below T_c may be regarded as the sum of an e. m. f. that is proportional to the intensity of the external magnetic field N and an e. m. f. that is proportional to J, independently of whether the metal is in the ferro- or the paramagnetic state, i. e., $E_x = R_1 Jib + R_2 Hib$, where R_1 and R_2 are Hall's constants in the ferro- and paramagnetic ranges, respectively, i is the current density, and b is the effective width of the plate. The presence of two members may be

Card 1/2

explained on the basis of the assumption of the presence in the ferromagnetic metal of two types of conductivity electrons. The first ones produce the classical Hall effect which is proportional to H, while the second ones deviate under the influence of the Weiss-Heisenberg field $H + \nu J$ which brings about the introduction of the second component. Moreover, the same phenomenon may be explained by the presence of electrons producing a spin-orbital interaction with ions of the metal. It is evident that in a real metal both phenomena take place. Bibliography: 19 references

V. R.

1. Magnetic alloys--Magnetic factors 2. Magnetic alloys--Temperature factors

Card 2/2

SOV/137-58-7-15626

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 244 (USSR)

AUTHOR: Lipatova, V.A.

TITLE: Temperature Relationship of Hall's Constant in Ferromagnetics (Temperaturnaya zavisimost' konstanty Kholla v ferromagnetikakh)

PERIODICAL: Tr. Ural'skogo politekhn. in-ta, 1957, Nr 72, pp 35-40

ABSTRACT: The value for Hall's e.m.f. of thermomagnetic alloys (see RZhMet, 1958, Nr 7, abstract 15625) was investigated in relation to the temperature and J above and below the Curie point (T_c). It is established that R_1 varies but little with temperature in all of the alloys investigated, conserving the same character of modification in the paramagnetic region, but that it depends upon the composition, changing to the negative sign and increasing in absolute value with an increase in Cu content. It is established that the Ni-Cu alloy with T_c=433°C must have an R_1 almost independent of the temperature. It is shown that relative to the investigation of alloys R_1 has no maximum in T_c, which agrees with the modern quantum-mechanics theory of the Hall effect.

V.R.

Card 1/1

1. Magnetic alloys--Temperature factors 2. Magnetic alloys --Magnetic factors

SOV/137-58-7-15613

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 242 (USSR)

AUTHORS: ~~Lipatova, V. A.~~, Gel'd, P. V., Davydov, K. N.

TITLE: Thermoelectric Properties of Alloys of Silicon with Iron, Chromium, and Manganese (Termoelektricheskiye svoystva splavov kremniya s zhelezom, khromom i margantsem)

PERIODICAL: Tr. Ural'skogo politekhn. in-ta, 1957, Nr 72, pp 105-120

ABSTRACT: Alloys of the type Fe-Si, Cr-Si, and Mn-Si were investigated throughout the full range of concentrations. Investigated in greater detail were Fe-Si alloys of a composition close to that of "lebowite" (40-60% Si). The initial materials used were Armco-Fe, electrolytic Cr, and 99.2-pure crystalline Si. Cylindrical specimens 2 mm in diameter and 40-50 mm long were obtained by drawing the melt from the crucible of an induction furnace into a thin quartz tube. The integral thermo-e.m.f. E was measured with the aid of the apparatus described earlier (Korzh, P. D., Zavodskaya laboratoriya, 1948, Vol 14, p 207) with an accuracy of up to 0.05 mv. It is established that, in an Fe-Si system, E is negative up to 4-6% Si and that it attains a maximum of 1.5 mv/100°C. Upon a further increase

Card 1/2

Thermoelectric Properties of Alloys (cont.)

in the concentration of Si, the absolute value for E decreases and at 17% Si it equals zero. Specimens containing 17 to 59% Si have a positive E insignificant in value and depending very little on the composition. In alloys containing >59% Si, E is negative and its numerical value increases rapidly on the enrichment of the alloy with Si, which is characteristic for semiconductors. The qualitative relationship of E to the composition is the same in Cr-Si and Mn-Si alloys as in the Fe-Si alloy. In all of the alloys the relationship between E and the composition corresponds to the phase diagram. The rectifying action of alloys rich in Si was investigated. Depending upon the location of the point contact either p-type or n-type conductivity was discovered which points to the microheterogeneity of the specimens, possibly related to an uneven distribution of impurities and a corresponding presence of impurity conductors with carriers of either type. The alloy with 51.0% Si has a semiconductive nature. It is assumed that $CrSi_2$ (51.8% Si), in contrast to other silicides, possesses detector properties. Bibliography: 20 references.

S. S.

1. Silicon alloys--Thermodynamic properties 2. Silcon alloys--Electrical properties

Card 2/2

137-58-6-13166

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 283 (USSR)

AUTHORS: Gol'berg, A.I., Lipatova, V.A., Gel'd, P.V.

TITLE: Electrical Properties of "Lebowite" (Elektricheskiye svoystva leboita)

PERIODICAL: Tr. Ural'skogo politekhn. in-ta, 1957, Nr 72, pp 252-254

ABSTRACT: An investigation of the relationship of Hall's constant R_x, the resistivity ρ, and the thermoelectromotive force α to the composition of an Fe-Si alloy in the range 47-59% Si at room temperature. Samples were prepared by smelting armco-Fe with technical (99.0%) Si. The melt was drawn into quartz capillaries of 2-4 mm diam. The samples were annealed at 800°C during 10-12 hrs or tempered at 1000° and quenched in water. Hall e.m.f. measurements were carried on by the usual method at a field intensity of 17,000-23,000 oersted. Measurements of α relative to Cu were taken with contact-temperature differences of 100°. The values of R_x and α are sufficiently large and change their sign in the range of 54-55% Si, which indicates semi-conductive properties of the alloys. With Si content $\sim$50% each of the three curves has a sharply

Card 1/2

137-58-6-13166

Electrical Properties of "Lebowite"

defined maximum corresponding to the $FeSi_2$ compound. In general, the results of an examination of tempered samples are consistent with the results obtained for annealed samples; only R_x which corresponds to hole-type conductivity has little relation to composition. R_x and ρ in this case are two orders of magnitude smaller than in annealed samples. The high-temperature modification of "lebowite" is similar to metal in properties.

L.M.

1. Iron-silicon alloys--Electrical properties

Card 2/2

24(3), 24(2), 18(3) SOV/126-7-2-37/39

AUTHORS: Gol'dberg, A. I., Lipatova, V. A. and Gel'd, P. V.

TITLE: The Effect of Decomposition of Leboite on Electrical Properties of Iron-Silicon Alloys (Vliyaniye raspada leboita na elektricheskiye svoystva splavov zheleza s kremniyem)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1959, Vol 7, Nr 2, pp 316-317 (USSR)

ABSTRACT: Leboite and disilicides of chromium and manganese exhibit semiconducting properties (Refs 1-6). These properties, in conjunction with their low thermal conductivity (Refs 3,7), give a special interest to these materials. For this reason the authors studied the effect of composition on the thermoelectric power, the Hall constant and electrical conductivity of FeSi-Si alloys. Measurements were carried out at room temperature on cast cylindrical samples. To obtain the high-temperature modification (α-leboite) the samples were annealed for four hours at 1000°C and then quenched in water. To stabilize β-leboite, raw samples were annealed for 10-12 hours at 800°C and then cooled gradually to room temperature. The Hall e.m.f. was

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The Effect of Decomposition of Leboite on Electrical Properties of Iron-Silicon Alloys

measured at applied magnetic fields from 17000-23000 oersted. The electrical resistance and thermoelectric power were measured simultaneously with the Hall effect by a method described earlier (Ref 1). It was found that electrical properties of iron-silicon alloys are very sensitive to the phase state of leboite. This is due to the fact that the high-temperature α-phase has an electrical resistivity, Hall constant and thermoelectric power, about three orders lower than those of the low-temperature modification (β-leboite). Thermoelectric power α depends strongly on the alloy composition. It is comparatively small at low contents of leboite but rises strongly on approach to the stoichiometric composition of β-leboite and then falls rapidly, changing its sign above 55 wt.% of Si. At its maximum the value of α reaches 0.035 mV/°C. Other properties of these alloys also depend strongly on composition. In particular (Fig 1) the 20°C isotherms of electrical resistivity (ρ) and the Hall constant (R_x),

The Effect of Decomposition of Leboite on Electrical Properties of Iron-Silicon Alloys

are similar to the thermoelectric power isotherm. The maxima of α, ρ and R_x occur at practically the same composition. The high values of α, ρ (max. of 2.0 Ohm.cm) and R_x (max. of 20 c.g.s, units) confirm that β-leboite is a semiconductor. In alloys containing up to 55 wt.% of Si, the hole mechanism of conductivity predominates; the hole density is of the order of $(3-5) \times 10^{18}$ cm^{-3} and their mobility is of the order of 1 cm^2 sec^{-1} V^{-1}. Alloys with more than 55 wt.% of Si have predominantly electron conductivity. Electrical properties of alloys containing α-leboite are quite different. Up to the point when Si separates out (55 wt.% of Si) alloys with α-leboite exhibit low thermoelectric power, electrical resistivity and Hall constant (Fig 2). This indicates that the semiconducting properties are lost on transition from β-leboite to α-leboite. A certain scatter of values of electrical conductivity of quenched samples (with α-leboite) is due to microcracks which are produced by large volume changes on transition to α-leboite.

SOV/126-7-2-37/39

The Effect of Decomposition of Leboite on Electrical Properties of Iron-Silicon Alloys

There are 2 figures and 9 Soviet references.

(Note: This is an abridged translation)

ASSOCIATION: Ural'skiy politekhnicheskiy institut imeni S.M.Kirova
(Ural Polytechnical Institute imeni S. M. Kirov)

SUBMITTED: February 19, 1958

Card 4/4

66242

18.8100, 24.7600

SOV/126-8-3-30/33

AUTHORS: Gol'dberg, A.I., ~~Lipatova, V.A.~~ and Gel'd, P.V.

TITLE: The Electrical Conductivity and the Hall Effect in Alloys of Iron and Silicon, Containing Leboite, at High Temperatures

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 8, Nr 3, pp 472-475 (USSR)

ABSTRACT: In an earlier paper (Ref 1) the authors reported their results of investigation of the electrical properties of β-leboite at room temperature; it was concluded that, in contrast to the α-phase, the β-phase is a semiconductor. To check this conclusion, the authors studied the temperature dependence of the electrical conductivity and the Hall effect of alloys of iron and silicon containing from 40 to 80% Si (by weight) at temperatures from 20 to 350°C. The alloys were prepared in an induction furnace using silicon of Kr.0 grade and Armco iron. Samples were prepared by sucking in the melt into quartz capillaries of 2.5 to 4.0 mm diameter. The low-temperature modification of leboite was obtained by annealing at 800°C (Ref 2,3). All measurements were carried out employing the usual compensation apparatus and pressure contacts. It was found that alloys with more than 45% Si exhibit the typical

The Electrical Conductivity and the Hall Effect in Alloys of Iron and Silicon, Containing Leboite, at High Temperatures

semiconductor type of variation of the electrical resistance with temperature. The exponential dependence of the resistance on temperature is particularly clear in samples containing 49 to 51% Si. These samples are closest in their composition to the β-phase. Moreover, their compositions are the same as those at which maxima of the electrical resistance, the Hall constant and the differential thermo-electric power occur on the curves representing composition against property; such maxima are found both at room and at higher temperatures. Outside the leboite region, all samples also exhibit semiconducting properties but the latter are less pronounced. In alloys containing 40 to 45% Si metallic conductivity predominates. Fig 1 shows the experimental data obtained for some of the samples plotted in coordinates of log σ (σ is the conductivity) against T^{-1} (T is the absolute temperature). Fig 1 shows that the conductivity of samples containing 50 to 55% Si is considerably greater than that of all the other samples and that alloys with 49 to 51% Si have the lowest

The Electrical Conductivity and the Hall Effect in Alloys of Iron and Silicon, Containing Leboite, at High Temperatures

conductivity. From the straight lines of Fig 1, the following impurity-centre activation energies (in eV) were obtained (the values in brackets denote % Si by weight): 0.13 (48%), 0.20 (49,51), 0.18 (53), 0.17 (55), 0.13 (57), 0.12 (59), 0.08 (65), 0.04 (75,80). The latter values show that there is a maximum in the dependence of the activation energy on the amount of silicon at compositions close to that of β-leboite. The temperature dependence of the Hall constant was measured only for some of the samples since, in the case of others, no reliable values could be obtained because of high scatter. Magnetic fields of 10^4 Oe were applied during these measurements and two directions of the field and current were used. The results obtained are given in Fig 2 which shows that the absolute value of the Hall constant of all samples decreases with increase of temperature. This indicates that the impurity carrier density rises with increase of temperature. Samples with 49 to 51% Si have positive Hall constants, ie their

 conductivity is of the hole type. This conclusion agrees

The Electrical Conductivity and the Hall Effect in Alloys of Iron and Silicon, Containing Leboite, at High Temperatures

with earlier measurements of the thermoelectric power (Ref 1). Outside the leboite region, the Hall constant is negative and its sign is reversed at 53 to 54% Si. In the same region of concentrations a reversal of the sign of the differential thermoelectric power was observed earlier; it is due to the presence of silicon crystallites in the alloys. The measurements carried out can be used to estimate the values of the current-carrier density and mobility. For example, the carrier density in the alloys of leboite composition at room temperature was found to be 7×10^{18} cm^{-3}, assuming that the Hall constant R_x is given by $R_x = 1/ne$. The current-carrier mobility for the same alloys amounted to 0.7 $cm^2 sec^{-1} v^{-1}$. The authors conclude that the results reported above confirm the earlier suggestion (Ref 1) of semiconducting properties of the low-temperature modification of leboite. There are 2 figures and 3 Soviet references.

Card 4/5 n.b. This is a complete translation except for figures.

66242

SOV/126-8-3-30/33

The Electrical Conductivity and the Hall Effect in Alloys of Iron and Silicon, Containing Leboite, at High Temperatures

ASSOCIATION: Ural'skiy politekhnicheskiy institut im S.M.Kirova (Urals Polytechnic Institute imeni S.M.Kirov)

SUBMITTED: July 14, 1958

Card 5/5

LIPATOVA, V.A.

Prismatic specimen in a uniform magnetic field. Trudy Ural. politekh. inst. no.92:66-74 '59. (MIRA 13:12)
(Magnetic fields) (Ferromagnetism)

LIPATOVA, V.A.

Ballistic demagnetising factor. Trudy Ural. politekh. inst. no.92: 75-84 '59. (MIRA 13:12)
(Magnetic fields) (Hysteresis)

KRUZHEVNIKOVA, Ye.I.; LIPATOVA, V.A.

Topology of a magnetic field in the vicinity of a disk. Trudy Ural. politekh. inst. no.92:85-93 '59. (MIRA 13:12)
(Magnetic fields) (Ferromagnetism)

85736

S/148/60/000/004/003/006
A161/A029

24.7700 1035, 1559, 1143

AUTHORS: Gol'dberg, A.I., Lipateva, V.A., Gel'd, P.V.

TITLE: Electrical Properties of the FeSi-Si Alloy System

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Chernaya metallurgiya, 1960, No. 4, pp. 121-127

TEXT: The low-temperature modification of the β-phase of the Fe-Si system has semiconductor properties, which has been proven before (Ref. 1,2), but the material investigated was of commercial purity. To get more accurate data an investigation has been carried out of alloys made of electrolytic iron and splinters of single crystal p-silicon molten in quartz crucibles in a high-frequency induction furnace. The alloys contained Al, Mg, Mn, Pb, Ni and Cr in a quantity not above 0.001 %. The conductivity, the Hall constant and thermoelectric motive force was measured in the temperature range from 20 to 400°C. A potentiometric device described in (Ref. 3) was used that makes simultaneous measurements of all these three characteristics possible. The data obtained are illustrated by graphs. Pronounced semiconductor properties of the β-phase and electronic conductivity were proven. Alloys with 38 to 100 % Si had a low conductivity (Fig. 2) with positive temperature coefficient indicating

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Electrical Properties of the FeSi-Si Alloy System

semiconductor properties. Judging by polytherms (Fig. 2), alloys with high content of β-leboite were up to 350-400°C conductive through alloying constituents, and then eigenconductive in a relatively narrow temperature range. Alloys with higher Si content had a comparatively long characteristical transition range between 200°C and excitation of eigenconductivity at about 400°C. This agrees well with literature data (Ref. 4) on the properties of Si of different purity. In general, the characteristics of commercial alloys and pure alloys studied here are considerably different. First of all, the current carriers in β-leboite have different sign: commercial alloys have hole conductivity, and purer alloys electronic conductivity. This is directly connected with the Al content (about 0.2 % in commercial leboite), whose effect is known since long (Ref. 9). It is expected that p-n transfers may be obtained in β-leboite, e.g., by alloying it with aluminum, and that pure leboite can be utilized in couple with alloyed aluminum in thermocouples with high temf for temperature measurements in high ranges up to 800-900°C in corrosive environment. Further investigations of the FeSi-Si system are necessary, mainly to determine the effect of different constituent elements and for the content

85736
S/148/60/000/004/003/006
A161/A029

Electrical Properties of the FeSi-Si Alloy System

of the semiconductive β-phase of leboite. There are 8 graphs and 9 references: 7 Soviet, 2 English.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnical Institute)

SUBMITTED: July 14, 1959

Figure 2:
Polytherms of Electric Conductivity

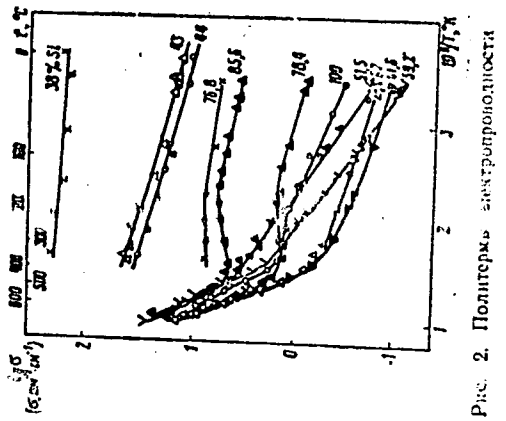

Рис. 2. Политермы электропроводности

Card 3/3

S/196/62/000/001/001/013
E194/E155

AUTHORS: Grigorov, K.V., and Lipatova, V.A.

TITLE: An investigation of magnetic anisotropy of dynamo steel in connection with its crystallographic texture

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.1, 1962, 3-4, abstract 1B 17. (Tr. Ural'skogo politekhn. in-ta, no.114, 1961, 5-13)

TEXT: Measurements of H_c were made on disc-shaped specimens of electrical sheet steel containing 0.9% Si, at various angles to the direction of rolling. It was found that annealing at 500 °C and then at 700 °C reduces the remanent stresses in the material, so reducing H_c. Each annealing makes an essential change in the nature of the anisotropy H_c; in the recrystallised material this relationship is in accordance with the nature of the crystallographic texture. After cold working, the nature of the anisotropy H_c is determined to a considerable extent by the remanent stresses. The change in the nature of anisotropy in the unannealed material indicates a genetic

Card 1/2

S/196/62/000/001/001/013
An investigation of magnetic ... E194/E155

relationship between the texture of recrystallisation and the texture of deformation.
9 literature references.

[Abstractor's note: Complete translation.]

Card 2/2

S/196/62/000/001/002/013
E194/E155

AUTHORS: Grigorov, K.V., and Lipatova, V.A.

TITLE: The magnetic anisotropy and crystallographic texture of transformer steel

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no. 1, 1962, 4, abstract 1B 18. (Tr. Ural'skogo politekhn. in-ta, no. 114, 1961, 14-23)

TEXT: The anisotropy H_c was investigated on disc-shaped specimens of cold-rolled electrical sheet steel containing 3% Si with various degrees of cold working. Measurements were made immediately after rolling, after the specimens had been annealed for 5 hours at 500 °C and after 30 minutes' annealing at 1000 °C. It was found that the anisotropy H_c in transformer steel with a texture depends in a complicated way on the nature of the crystallographic texture, on the internal stresses, and possibly on other factors. It is confirmed that change in the nature of the texture of recrystallisation takes place by gradual transition from one type of texture to another over a wide range

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The magnetic anisotropy and ...

of strain values. Changes in anisotropy can reveal structural changes in the strained unannealed material that appear as changes in the nature of the texture of recrystallisation. 5 literature references.

[Abstractor's note: Complete translation.]

Card 2/2

18.8100

33827
S/137/62/000/001/156/237
A006/A101

AUTHORS: Gulevskaya, A.S., Lipatova, V.A., Tel'd, P.V.

TITLE: Heat conductivity of Fe and Si alloys containing β-leboite

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 1, 1962, 48, abstract 1I336 ("Tr. Ural'skogo politekhn. in-ta", 1961, no. 114, 90 - 95)

TEXT: Heat conductivity of alloys containing 40 - 100% Si was measured by A.F. Ioffe's method, which was modified for the use of 12-18 mm^2-section specimens. The heat contact is assured by melting the ends into Sn. Heat-conductivity isotherms (20°C temperature) were plotted for commercial alloys whose leboite β-modification was p-conducting, and pure alloys with n-type conductivity. In spite of a substantial difference of the electron energy spectrum, heat conductivities of both series of specimens were merely slightly different. As far as the heat conductivity observed was a sum of phononic and electronic heat conductivities, the conclusion is drawn that the former is of predominant importance. The author studied the effect of admixtures to β-leboite up to 1 weight % Al; the addition

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33827

S/137/62/000/001/156/237
A006/A101

Heat conductivity of Fe and Si alloys ...

of up to 0.1 weight % Al reduced sharply heat conductivity. Further alloying had a lesser effect. There are 11 references.

[Abstracter's note: Complete translation]

Card 2/2

S/849/62/000/000/015/016
A006/A101

AUTHORS: Gol'dberg, A. I., Lipatova, V. A., Gel'd, P. V.

TITLE: Electric properties of iron alloys with silicon containing leboite

SOURCE: Vysokotemperaturnyye metallokeramicheskiye materialy. Inst. metallo-ker. i spets. spl. AN Ukr.SSR, Kiev, Izd-vo AN Ukr.SSR, 1962, 140 - 147

TEXT: The authors present results of investigating the electric properties of iron alloys with silicon produced from commercial and pure initial materials, such as transformer iron and electrolytical iron with single-crystal silicon. Basic measurements were made with alloys containing 40 to 90 weight % Si. Electric conductivity ($\sigma = 1/\rho$), the Hall coeffcient (R_x) and the thermo-emf (α) of the aforementioned alloys were investigated. High-temperature α-le- [illegible] resulting in the Fe-Al system, was found to have metal conductivity. ρ, [illegible] low-temperature [illegible]

conductor nature. In the temperature range from 0 to 400°C the ξ_β-phase is characterized by extrinsic conductivity. The mean activation energies of the admixture levels of commercial alloys, calculated from temperature dependences of σ and ξ_x, are in a satisfactory agreement with each other and are approximately equal to 0.2 ev. Temperature investigations of pure specimens (at 20 - 400°C and in some cases 700°C) have shown that the ξ_3-phase is characterized by extrinsic conductivity, which at 350°C passes over into intrinsic conductivity; the forbidden band width is then close to 1 ev. Conductivity of β-leboite, sinthesized from commercial materials, has a hole nature; this is caused by the presence of about 0.2% Al. The ξ_3-phase, obtained from more pure materials, shows an electronic conductivity which is replaced by hole conductivity when 0.1% Al is added. All bi-phase specimens containing β-leboite and silicon, show semiconductor properties. There are 5 figures.

GEL'D, P.V.; LIPATOVA, V.A.; SIDORENKO, F.A.; SHUBINA, T.S.

[illegible] SOV/1700

[illegible] po spektroskopii, 1956.
[illegible] Materials of the 10th All-Union
[illegible] Vol 2: Atomic Spectroscopy)
[illegible] 1958. 568 p. (Series: Its:
[illegible] 1,000 copies printed.

[illegible] nauk SSSR. Komissiya po

[illegible] Academician, (Resp. Ed.);
[illegible] and Mathematical Sciences;
[illegible] and Mathematical Sciences;
[illegible] and Mathematical Sciences;
[illegible] Sciences; S.M. Rayskiy,
[illegible] Sciences; L.K. Klimovskaya,
[illegible] Sciences; V.S. Miliyanchuk
[illegible] Mathematical Sciences; A.Ye.
[illegible] Mathematical Sciences;
[illegible] Y. Lazaryuk.

[illegible] scientists and researchers in
[illegible] as well as for technical personnel
[illegible] industries.

[illegible] scientific and technical studies
[illegible] at the 10th All-Union Confer-
[illegible] The studies were carried out by
[illegible] institutes and include
[illegible] and other sources. The
[illegible] spectroscopy: spectra of rare earths,
[illegible] chemical methods for controlling
[illegible] technology of gas discharge,
[illegible] dispersion in metal vapors,
[illegible] theory, spectrum analysis of ores
[illegible] for quantitative spectrum
[illegible] spectral determination of the
[illegible] of isotopes, tables, and
[illegible] spectrographic analysis,
[illegible] the parameters of calibration
[illegible] of metals, spectrum analysis in
[illegible] metallurgy, and principles and
[illegible] analysis.

[illegible] Conference (Cont.) SOV/1700

[illegible] N.L. Slyusareva, N.P.
[illegible] Z.N. Samsonova, L.S.
[illegible] I.I. Smirenkina,
[illegible] Pogacheva, V.F.
[illegible] Gorbachev, F.A. Kostareva,
[illegible] and N.N. Kuznetsova.
[illegible] Analysis of Pure Metal for 556

[illegible]

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7-7-59

5(2), 5(4)

AUTHORS: Karabash, A. G., Peyzulayev, Sh. I., Slyusareva, R. L., Lipatova, V. M.

SOV/75-14-1-19/32

TITLE: A Chemico-Spectrographic Method for the Analysis of Metallic Beryllium and Beryllium Oxide of High Purity (Khimiko-spektral'nyy metod analiza metallicheskogo berilliya i okisi berilliya vysokoy chistoty)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 1, pp 94-99 (USSR)

ABSTRACT: The spectrochemical method described in the present paper permits the simultaneous determination of the following 24 impurities in metallic beryllium and beryllium oxide: Mg, Ca, Ba, Al, Ti, V, Cr, Mo, Mn, Fe, Co, Ni, Cu, Ag, Zn, Cd, Be, Pb, Sb, Bi, Ga, In, Tl, Te. The determination of Na was carried out separately in a glass spectrograph. For the enrichment of admixtures beryllium was extracted in form of its basic acetate $Be_4O(CH_3COO)_6$ with chloroform. This basic beryllium compound is satisfactorily resistant against the action of many organic reagents (water, hydrochloric acid) and easily soluble in organic solvents. Solubility in chloroform amounts

A Chemical Spectrographic Method for the Analysis of Metallic Beryllium and Beryllium Oxide of High Purity SOV/75-14-1-12/32 [illegible]

[illegible] in 100 ml HHCl, whereas the contents of the admixtures to be determined are practically insoluble in [illegible] chloroform extract is three times washed with hydrochloric acid, and the admixtures, together with a small quantity of Be (1/20 of the initial quantity) pass quantitatively into the solution of hydrochloric acid. In this way the admixtures are enriched 20 - 25-fold. By this enrichment the sensitivity of admixture determination is increased from 10^{-3} - 10^{-4}% (without enrichment) to 10^{-4} - 10^{-5}%. The lines used for the spectral-analytical determination of the 24 admixtures and of sodium are shown in a table. The main quantity in the concentrate is Be_2O_3. By means of a special process, which is described in detail in this paper, the authors conveyed the beryllium oxide into a glass-like modification (hexagonal crystal lattice of the Wurtzite type), which differs from normal Be_2O_3 by the much smaller crystals. This modification permits an increase of the weighed in portion and thus also an increase of the sensitivity of determination. The corresponding investigations of X-ray structure were carried out

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A Chemico-Spectrographic Method for the Analysis of Metallic Beryllium and Beryllium Oxide of High Purity SOV/75-14-1-19/32

by Ye. S. Makarov. The exactness and reproducibility of the elaborated method was tested on the basis of 25 artificial mixtures, and also by comparison with results obtained by chemical methods of determination. The relative error of determination (arithmetic mean) amounts to ± 20%, only at the sensitivity limit of the method the error attains values of 50 - 100%. Errors occur particularly in connection with the determination of cadmium. The method may be used for the analytical control of beryllium of a high degree of purity. Also a method for the spectroanalytical determination of samples without enrichment of admixtures was worked out which may serve for the control of technical products (accuracy 10^{-3} - 10^{-4}%). Carrying out of both kinds of determination is very accurately described in the paper. There are 2 figures, 2 tables, and 18 references, 3 of which are Soviet.

SUBMITTED: October 28, 1957

Card 3/3

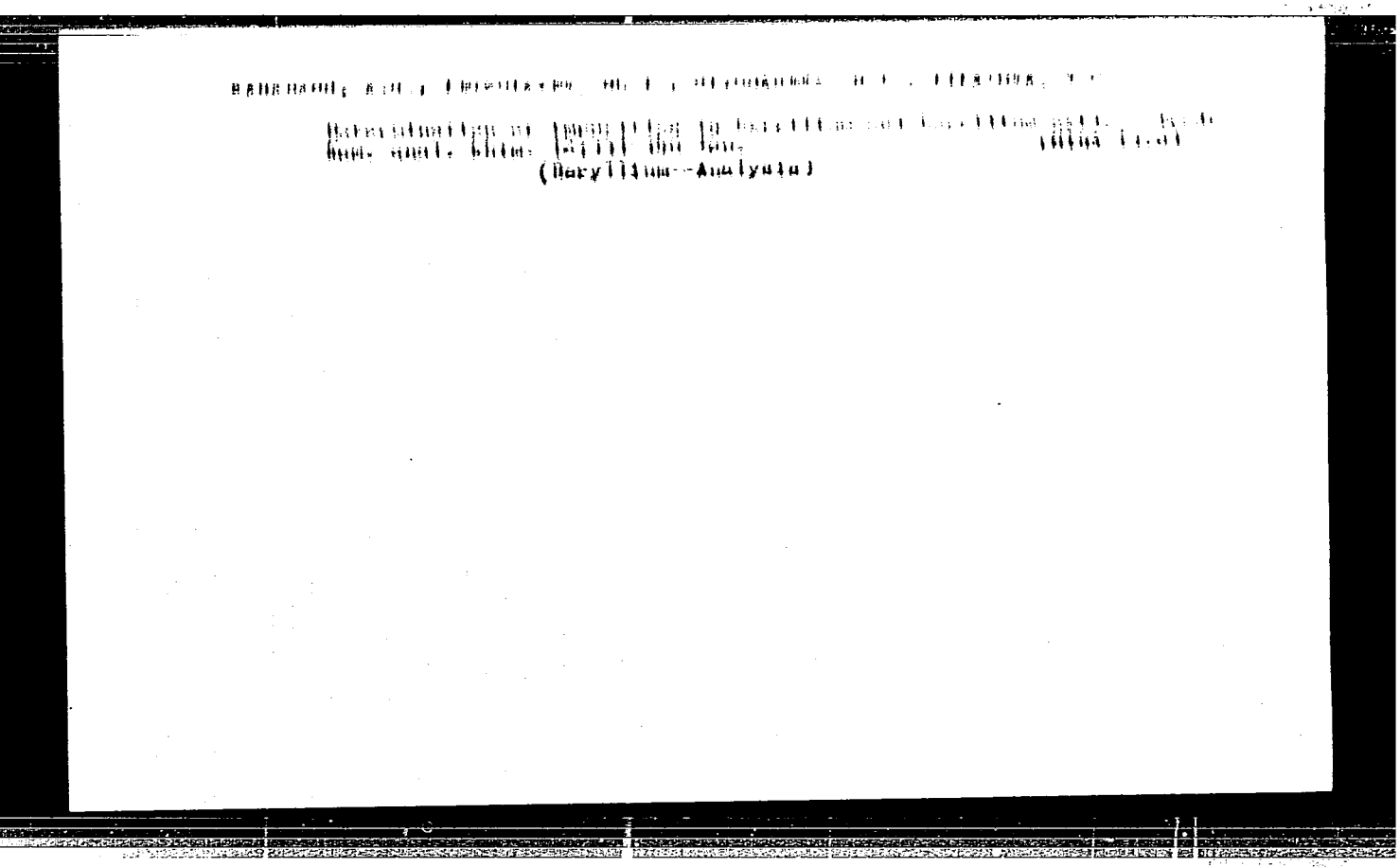
KARABASH, A.G.; PEYZULAYEV, Sh.I.; SLYUSAREVA, R.L.; SOTNIKOVA, N.P.; SMIRNOVA-AVERINA, N.I.; SAMSONOVA, Z.N.; KRAUZ, L.S.; MOROZOVA, G.G.; ROMANOVICH, L.S.; SMIRENKINA, I.I.; LIPATOVA, V.M.; SAZANOVA, S.K.; PUGACHEVA, L.I.; USACHEVA, V.P.; VORONOVA, Ye.F.; GORBACHEV, P.D.; KOSTAREVA, F.A.; KOSTEREVA, N.T.; YELOVATSKAYA, A.I.; KUZNETSOVA, N.N.

Spectrochemical analysis of pure metals for impurities. Fiz. sbor. no.4:556-562 '58. (MIRA 12:5)
(Spectrochemistry)

KRAUZ, L.S.; KARABASH, A.G.; PEYZULAYEV, Sh.I.; LIPATOVA, V.M.; MOLEVA, V.S.

Spectrochemical method of impurities determination in metallic bismuth and its compounds. Trudy Kom. anal. khim. 12:175-186 '60. (MIRA 13:8)

(Bismuth--Analysis) (Spectrum analysis)



GRIGOROV, K.V.; LIPATOVA, V.N.

Magnetic anisotropy and the crystallographic texture of transformer steel. Trudy Ural.politekh.inst. no.14:14-22 '61. (MIRA 16:6)

(Steel--Magnetic properties) (Crystal lattices)

SOCHAVA, V.B.; LIPATOVA, V.V.

Distribution of beech in the forests of Moldavia. Geobotanika Ser. 3 no. 8:259-288 '52. (MLRA 6:6)

1. Botanicheskiy institut imeni V.L. Komarova akademii nauk SSSR.
(Moldavia--Beech)

LIPATOVA, V.V.

Upper Permian sediments in the cis-Ural region near Aktiubinsk; from data obtained by deep borings. Nauch.dokl.vys.shkoly; geol.-geog.nauki no.2:112-115 '58. (MIRA 12:2)

1. Saratovskiy universitet, geologicheskiy fakul'tet, kafedra istoricheskoy geologii.
(Aktiubinsk region--Rocks, Sedimentary)

SOCHOVA, V.B.; ISACHENKO, T.I.; LIPATOVA, V.V.

Work done by the V.L. Komarov Botanical Institute of the Academy of Sciences of the U.S.S.R. in the Amur basin in 1957.
[illegible] (MLRA 11:9)

[illegible]

3 (5)

AUTHOR: Lipatova, V. V. SOV/20-128-4-46/65

TITLE: Recent Data on the Kazanskiy Stage of the Ural Region of Aktyubinsk

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 4, pp 804 - 805 (USSR)

ABSTRACT: Upper Permian deposits are very widely distributed in the Priural'ye (Ural region) of Aktyubinsk. They take part in the Paleozoic petroleum-bearing structures and form their limbs and crests. No agreement could have been hitherto obtained on the stratigraphy of these deposits since their lithological composition is variable within their aerial extent, besides, they are only weakly characterized with respect to paleontology. Some research workers identified neither the Kazanskiy nor the [illegible] kazanskiy upon which were similar to those of the Tatarskiy

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epoch. All hitherto correlations were based upon natural exposures and lithology. The pelecypods and ostracods found here were neglected. They are, however, characteristic of the Tatarskiy series of the European part of the USSR. By means of deep bore-holes the author investigated the lower parts of the red-colored rocks and the contact with the Kungurskiy series in the eastern part of the region mentioned in the title, i.e. in the eastern sections of the Predural'skiy (pre-Ural-) marginal downwarping. The author sorted out the Kazanskiy as well as the Tatarskiy series on the basis of the macro- and microfauna, of spore-pollen complexes as well as of mineralogical composition. The first one is more thoroughly characterized. 4 stages could be classified inspite of an abrupt change in lithological composition (90-100, 300-500, 175-250, 60-100 m thick, respectively). The 1st, 2nd, and 4th stages gradually wedge out in an easterly direction. Only the third stage exists in the eastern-most points of distribution of Upper Permian rocks. It corresponds to the widest distribution of the Kazanskaya transgression. The third stage was erroneously assumed to belongto the Kungurskiy series by previous research

workers. The fossil finds of a marine Kazanskaya fauna in the upper part of this "Kungurskiy" series were neglected. The change of the lithological composition of the stages in their aerial extent is connected with the sedimentation in the coastal zone. Sections attesting to normal as well as abnormal salt concentrations and displaying delta deposits may be found here even in adjacent areas. There are 5 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut geologii pri Saratovskom gosudarstvennom universitete im. N. G. Chernyshevskogo (Scientific Research Institute of Geology at the Saratov State University imeni N. G. Chernyshevskiy)

PRESENTED: May 28, 1959, by N. S. Shatskiy, Academician

SUBMITTED: May 22, 1959

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(MIRA 15:7)

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Evaluating the full productivity of the aerial part of the grass cover. Bot.zhur. 47 no.4:473-484 Ap '62. (MIRA 15:8)

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(Siberia, Eastern—Pasture research)

LIPATOVA, V.V.

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GRIBOVA, S.A.; ISACHENKO, T.I.; KARPENKO, A.S.; LIPATOVA, V.V.

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1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.

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Pathogenesis and therapy of glossalgia. Stomatologiia no.3: 17-18 My-Je '55. (MLRA 8:9)

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(TONGUE, diseases,
pain, pathogen. & ther.)
(PAIN,
tongue, pathogen. & ther.)

LIPATS, A. A., Cand Med Sci -- (diss) "Effects of intravenous injections of novocain and dimedrol upon the course of experimental shock induced by blood transfusion." Mos, 1957. 10 pp (Min of Health RSFSR, Mos Med Stomatological Inst), 200 copies (KL, 1-58, 121)

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47. **Antishock Effect Exerted by Benadryl**

"Prophylactic Use of Benadryl in Experimental Hemotransfusion Shock," by A. A. Lipats (Moscow), Chair of Pathologic Physiology (head, Prof N. A. Fedorov), Moscow Medical Stomatologic Institute, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 1, No 2, Mar/Apr 57, pp 25-31

The antishock action of benadryl was studied on 32 dogs by recording the arterial blood pressure, the pressure in the portal vein and the circulating blood volume. Benadryl was injected intravenously, 15 mg per kilogram of body weight. Shock was induced by injecting 2-5 ml of rabbit blood per kilogram body weight.

Injection of benadryl resulted in the rise of the arterial pressure and increased pulse rate.

Heterotransfusion following injection of benadryl caused a slight (not more than 23.2%) and transient (1.2-2 minutes) fall in arterial blood pressure. The volume of circulating blood was not significantly altered.

The results suggested that the antishock effect of benadryl is due to its sympathomimetic and adrenosensitizing properties. (U)

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(SEROTONIN,
review (Rus))

FROM, A.A., LIPATS, A.A., (Moskva)

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(BLOOD VOLUME, determ.
polyglucin method of determ. of circulating blood (Rus))
(DEXTRAN, ther.
polyglucin method of determ. of level of circulating blood (Rus))

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Use of polyglucin in hemorrhage secondary to radiation injuries.
Probl.gemat. i perel.krovi 4 no.8:48-51 Ag '59. (MIRA 13:1)

1. Iz TSentral'nogo ordena Lenina instituta gematologii i perelivaniya krovi (dir. - deystvitel'nyy chlen AMN SSSR prof. A.A. Bagdasarov) Ministerstva zdravookhraneniya SSSR.
(RADIATION INJURY exper.)
(HEMORRHAGE exper.)
(DEXTRAN ther.)

FEDOROV, N.A.; LIPATS, A.A. (Moskva)

Dynamics of changes of serotonin in the blood of dogs during hemotransfusion shock. Pat. fiziol. i eksp. terap 4 no. 5:8-13 S-O '60. (MIRA 13:12)

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(SEROTONIN) (BLOOD TRANSFUSION) (SHOCK)

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Polyglucin as a hemostatic. Khirurgiia 37 no.5:70-75 My '61.
(MIRA 14:5)

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Methodology of determination of serotonin (5-oxytryptamine) in the blood and tissues. Pat. fiziol. i eksp. terap. 6 no.3: 80-82 My-Je'62 (MIRA 17:2)

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Public health and the problem of blood donors. Probl. gemat. i perel. krovi no.5:3-9 '65. (MIRA 18:10)

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BAMBERG, Ye. A., kand.tekhn.nauk; LIPAVSKAYA, N. Ye., inzh.; MALKOVA, G.M.

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Effect of intravenous injection of a hypertonic urea solution on the blood. Vop. neirokhir. 27 no.5:51-53 S-O '63. (MIRA 17:5)

1. Nauchno-issledovatel'skiy ordena Trudovogo Krasnogo Znameni institut neyrokhirurgii imeni N.N. Burdenko (dir. - prof. B.G. Yegorov) AMN SSSR.

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Effect of intravenous introduction of a hypertonic urea solution on the blood in experimental cerebral edema. Vop. neirokhir. 28 no.1:33-35 Ja-F '64. (MIRA 18:1)

1. Biokhimicheskaya laboratoriya (zav. - doktor biol. nauk M.Sh. Promyslov) Nauchno-issledovatel'skogo ordena Trudovogo Krasnogo Znamini instituta neyrokhirurgii imeni N.N. Burdenko (direktor - deystvitel'nyy chlen AMN SSSR prof. B.G. Yegorov) AMN SSSR, Moskva.

LIPAVSKIY, S.L.

Effect of intravenous introduction of hypertonic urea solution on some blood indices in neurosurgical patients. Vop.neirokhir. 28 no.4:51-53 Jl-Ag '64. (MIRA 18:3)

1. Nauchno-issledovatel'skiy ordena Trudovogo Krasnogo Znameni institut neyrokhirurgii imeni Burdenko (dir. - prof. A.I.Arutyunov) AMN SSSR, Moskva.

S/194/61/000/010/072/082
D271/D301

9.6000

AUTHOR: Lipay, I.N.

TITLE: Signal decoding equipment in the compatible stereo-color television system with spectrum compression

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 10, 1961, 20, abstract 10 K144 (Tr. nauchno-tekhn. konferentsii Leningr. elektrotekhn. in-ta svyazi, no. 2, L., 1961, 39-44)

TEXT: Basic circuit of the decoder of the stereoscopic color TV system is given. French quartz crystal delay line is used for storing color difference signals transmitted on alternate lines (as in the Henri de France system). Favorable results are obtained.
[Abstracter's note: Complete translation]

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AKSENTOV, Yu.V.; GOL'DIN, A.A.; DZHAKONIYA, V.Ye.; DUSHKEVICH, N.I.; YERGANZHIYEV, N.A.; YEFIMKIN, V.I.; LIPAY, I.N.; MINENKO, Yu.G.; ODNOL'KO, V.V.; PEREVEZENTSEV, L.T.; TARANETS, D.A.; SHMAKOV, P.V., prof.; KUKOLEVA, T.V., red.; BELYAYEVA, V.V., tekhn. red.

[Theory and practice of color television]Teoriia i praktika tsvetnogo televideniia. Moskva, Sovetskoe radio, 1962. 661 p. (MIRA 16:1)

(Color television)

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Construction of decoding networks for stereocolor television receiving systems. Elektrosviaz' 16 no.11:22-29 N '62. (MIRA 15:11)

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Calculation of stilling polls under conditions of the discharge of water into an empty afterbay. Visti Inst.gidrol.i gidr.AN URSR 18:48-54 '61. (MIRA 15:3)

(Spillways)

L 20724-66

ACC NR: AP6012000 SOURCE CODE: UR/0198/65/001/005/0123/0126

AUTHOR: Sukhomel, G. I. (Kiev); Lipay, I. Ye. (Kiev)

ORG: Institute of Hydraulic Engineering, AN UkrSSR (Institut gidromekhaniki AN UkrSSR)

TITLE: Effect of inclination of upper edge of an apron on its reliable functioning

SOURCE: Prikladnaya mekhanika, v. 1, no. 5, 1965, 123-126

TOPIC TAGS: hydrodynamics, hydraulic engineering

ABSTRACT: The problem as stated in the title is reported in this article. Results of laboratory experiments are given which indicate that aprons with inclined upper edges and also walls of a cascade configuration may prove to be unsafe baffles. Recommendations of allowable angles for these structures are given. Orig. art. has: 3 figures and 2 formulas. [JPRS]

SUB CODE: 20, 13 / SUBM DATE: 20Aug64 / ORIG REF: 004 / OTH REF: 001

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IZD-VO AKADEMII PEDAGOG. NAUK RSFSR., 1953 327 p.
(PEDAGOGICHESKAYA BIBLIOTEKA UCHITELYA)

At head of title: AKADEMIYA PEDAGOGI CHESKIKH NAUK RSFSR. INSTITUT NATSIONAL'NYKH SHKOL

LIPAYEV, V.M.

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Materials on the nutrition of predetory birds in southeastern Transbaikalia according to the analysis of regurgitated food remains. Izv. Irk.gos.protivochum. inst. 10:103-110 '52.
(TRANSBAIKALIA--BIRDS OF PREY) (MIRA 10:12)
(BIRDS—FOOD)

Lipayev, V. M.

LIPAYEV, V.M.

Combined method for controlling tarbagans. Izv. Irk.gos.protivochum. inst. 13:55-75 '54. (MIRA 10:12)
(TRANSBAIKALIA--MARMOTS) (RODENT CONTROL)